



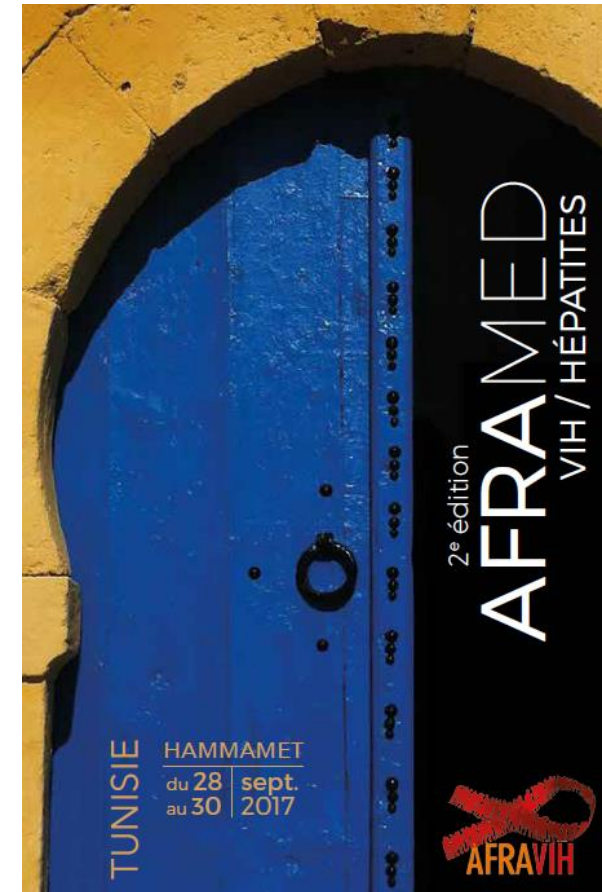
# Morbi-mortalité liée aux hépatites virales dans les pays du Sud

**Hammamet, 30.09.2017**

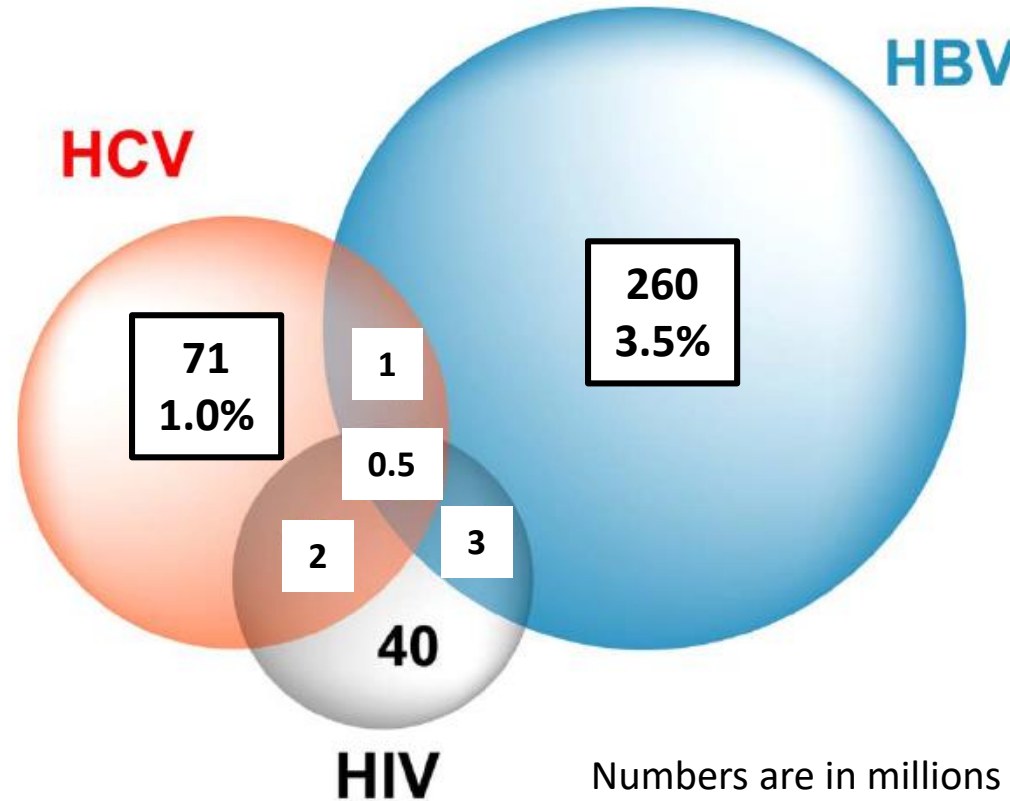
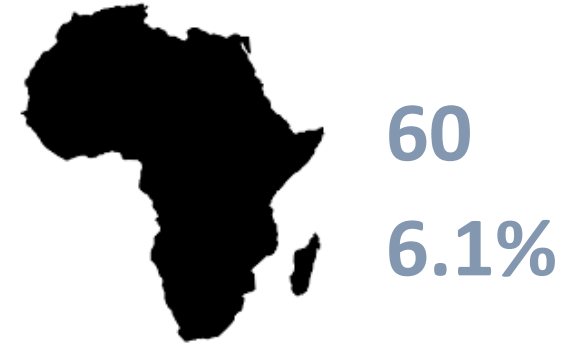
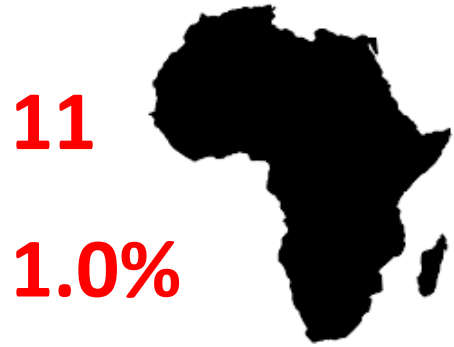
Gilles Wandeler, MD MSc

**u<sup>b</sup>**

**UNIVERSITÄT  
BERN**

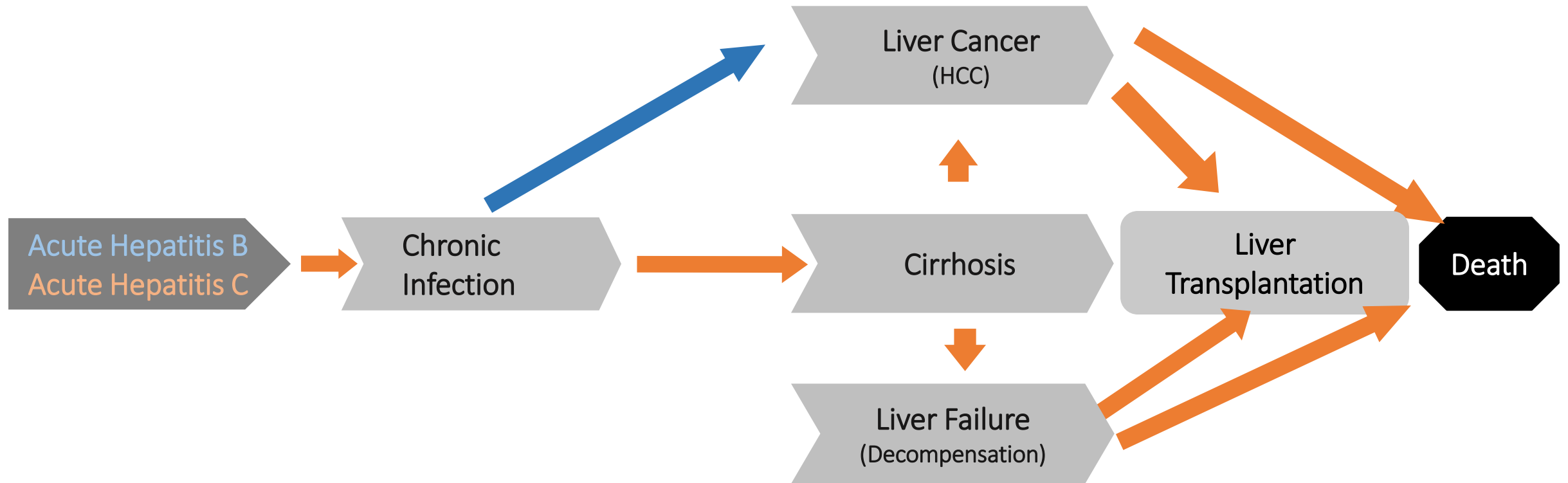


# Hépatites virales: Global



Numbers are in millions of individuals

# Histoire naturelle des hépatites virales B et C



# Histoire naturelle des hépatites virales

## SESSION PARALLÈLE 5 – 8:00 / 10:30

### Hépatites virales 2

Modérateurs : Jalel Boubaker (Tunisie),  
Nabil Debzi (Algérie)

SP5.1 Prise en charge de l'hépatite E,  
actualités (15') Aicha Bensalem (Algérie)

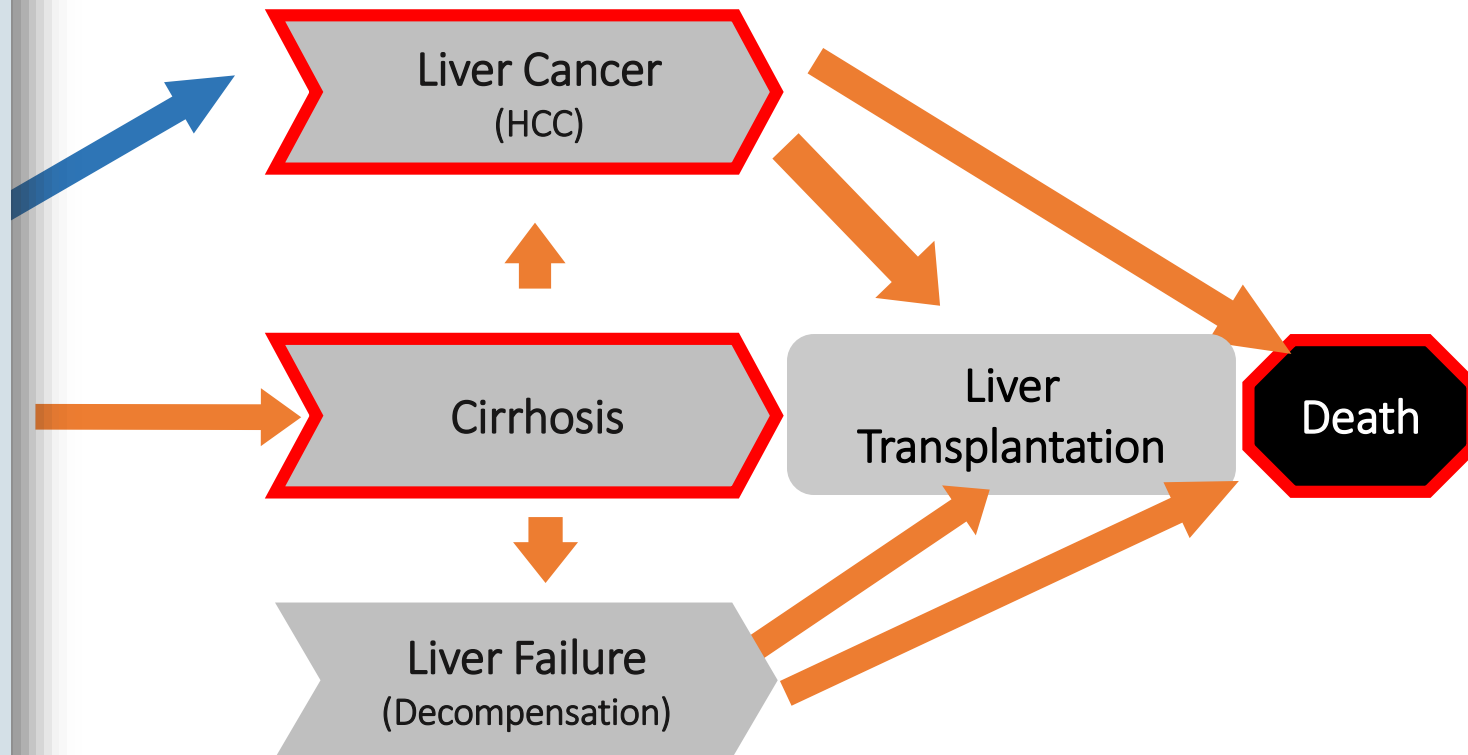
SP5.2 Morbi-mortalité liée aux hépatites virales  
dans les pays du Sud (15')  
Gilles Wandeler (Suisse)

SP5.3 Enjeux autour de la prévention  
des hépatites dans les pays du Sud (15')  
Maud Lemoine (Royaume-Uni)

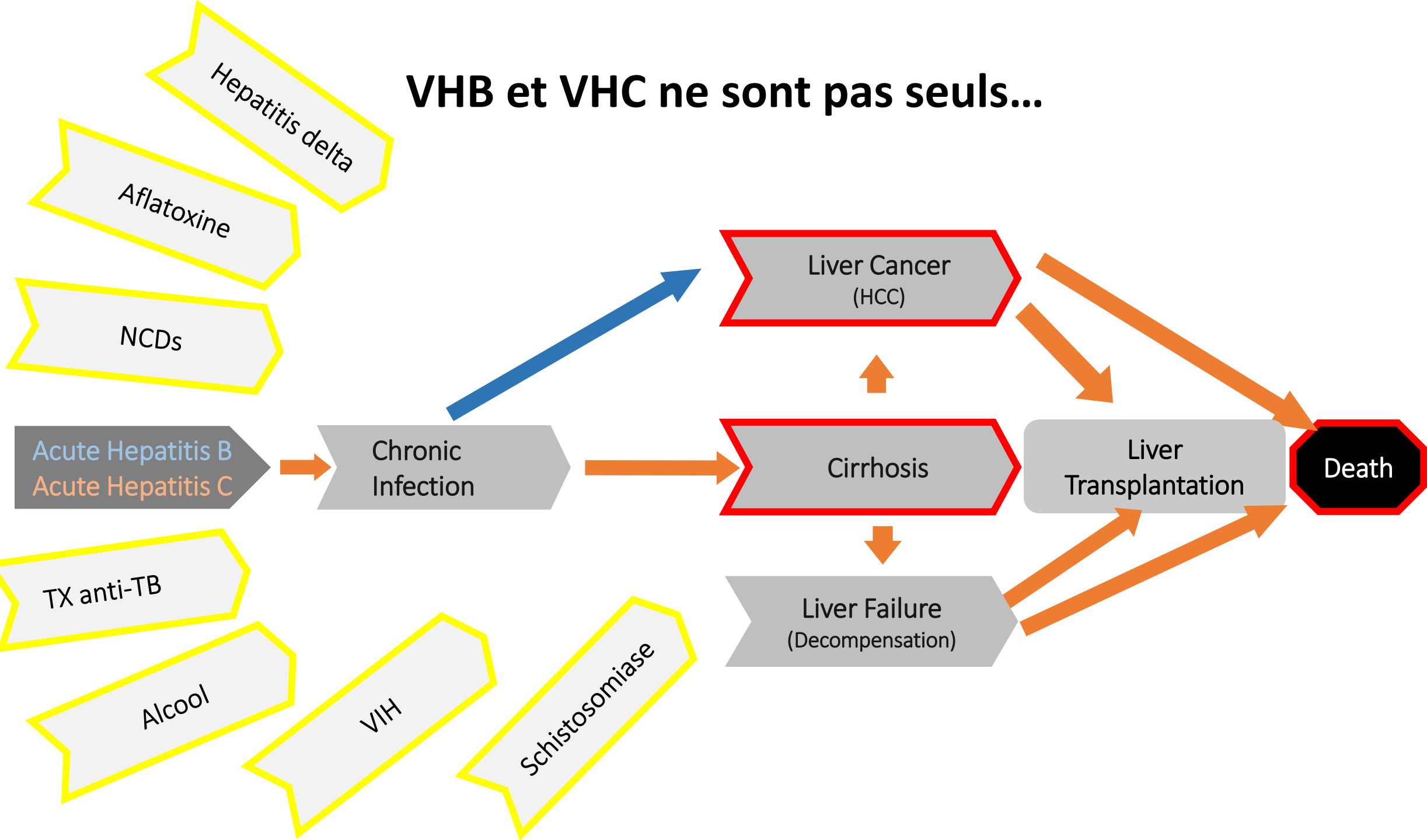
SP5.4 Mise au point VHD (15')  
Richard Njouom (Cameroun)

SP5.5 CHC et prise en charge en Afrique (15')  
Alain Attia (Côte d'Ivoire)

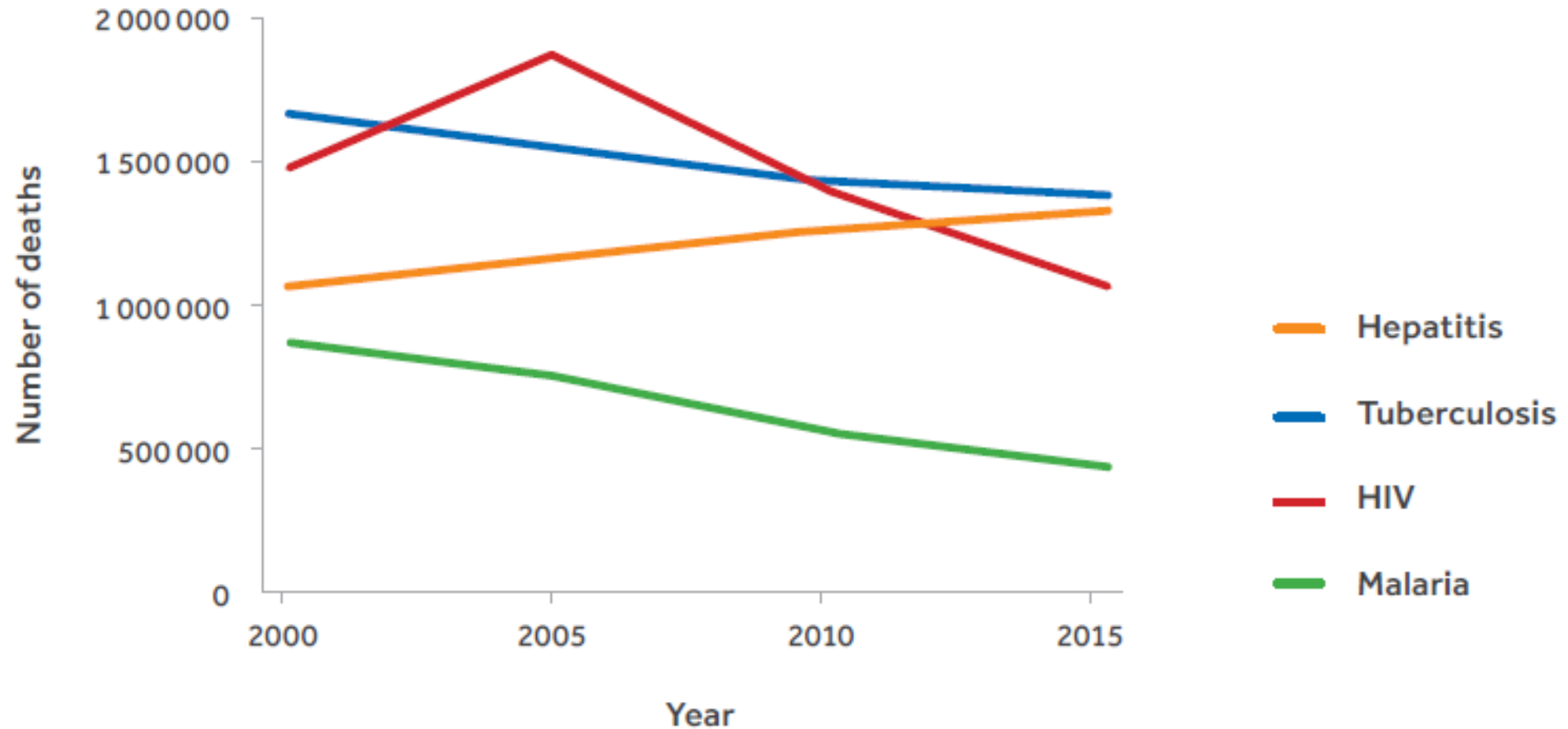
SP5.6 Cas cliniques (45')  
Leila Safer (Tunisie) (20')  
Nabil Debzi (Algérie) (20')



# VHB et VHC ne sont pas seuls...

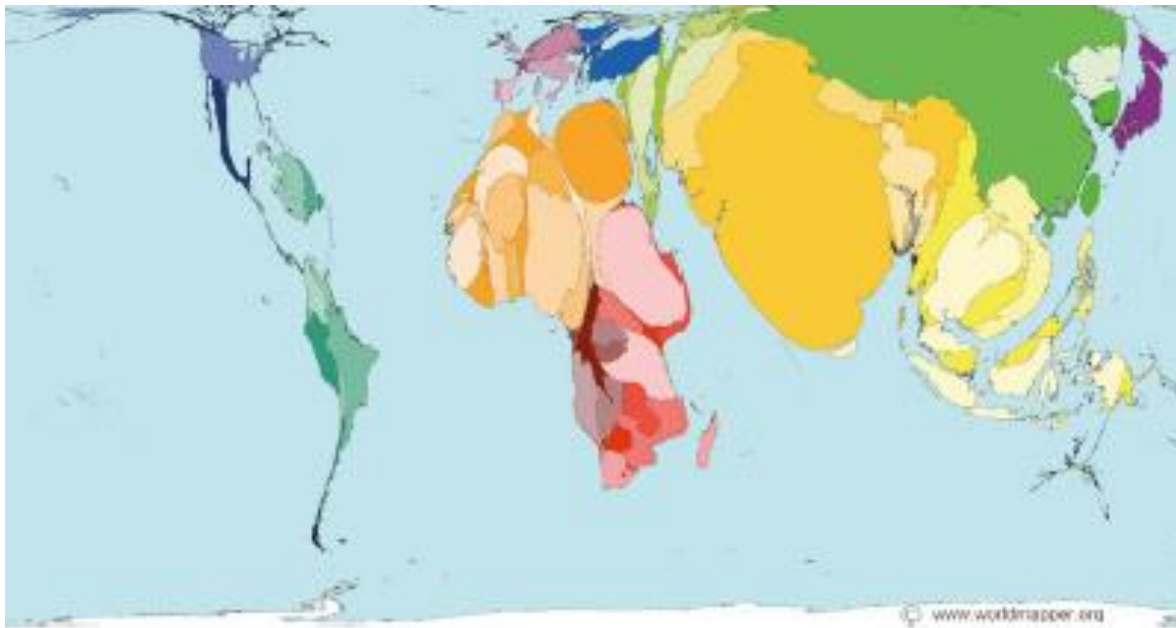


# La mortalité liée aux hépatites virales est en augmentation

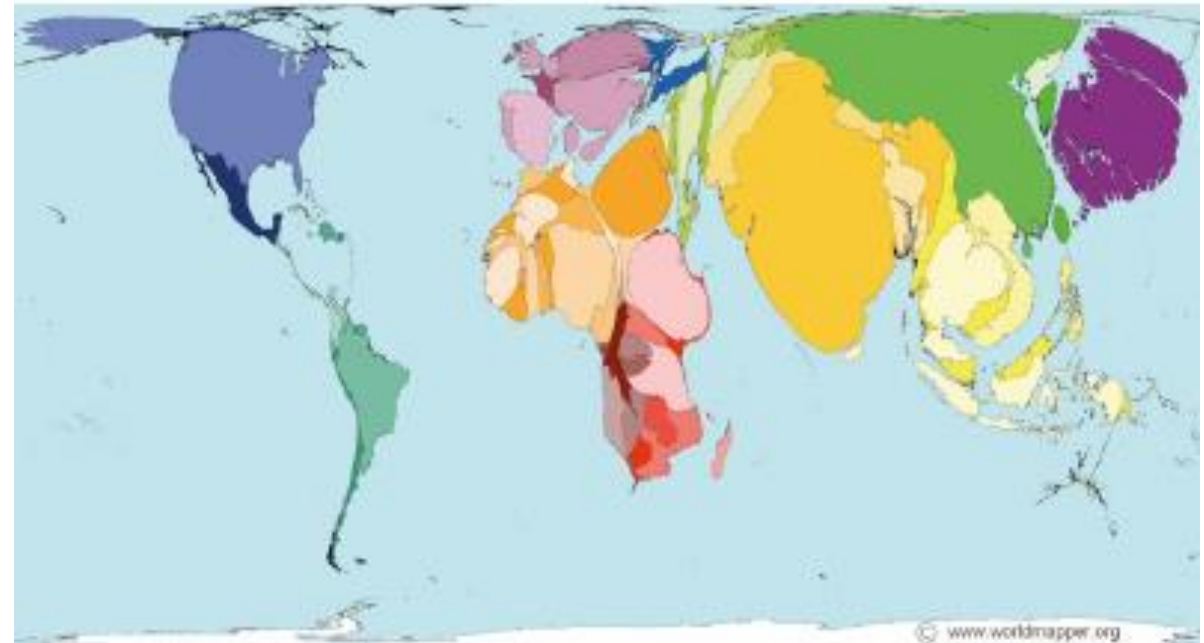


# Distribution inégale des maladies hépatiques

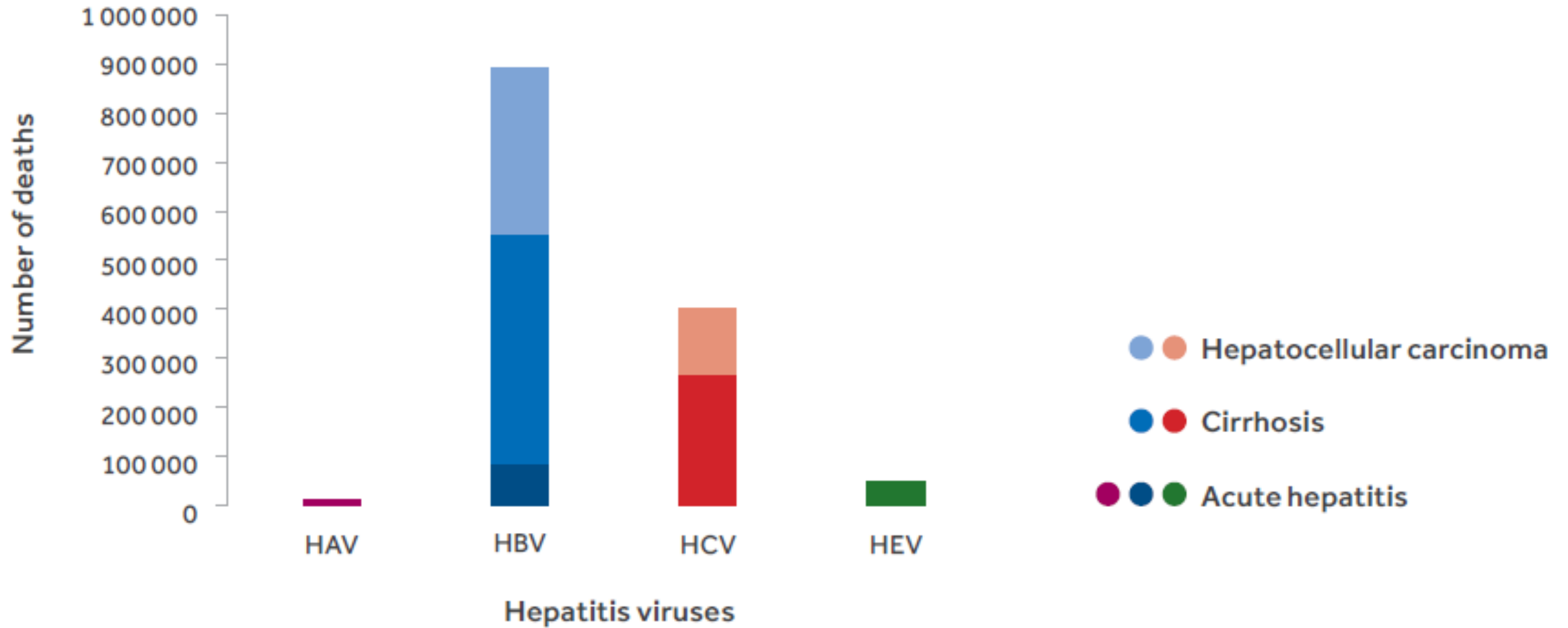
HBV-related mortality



HCV-related mortality



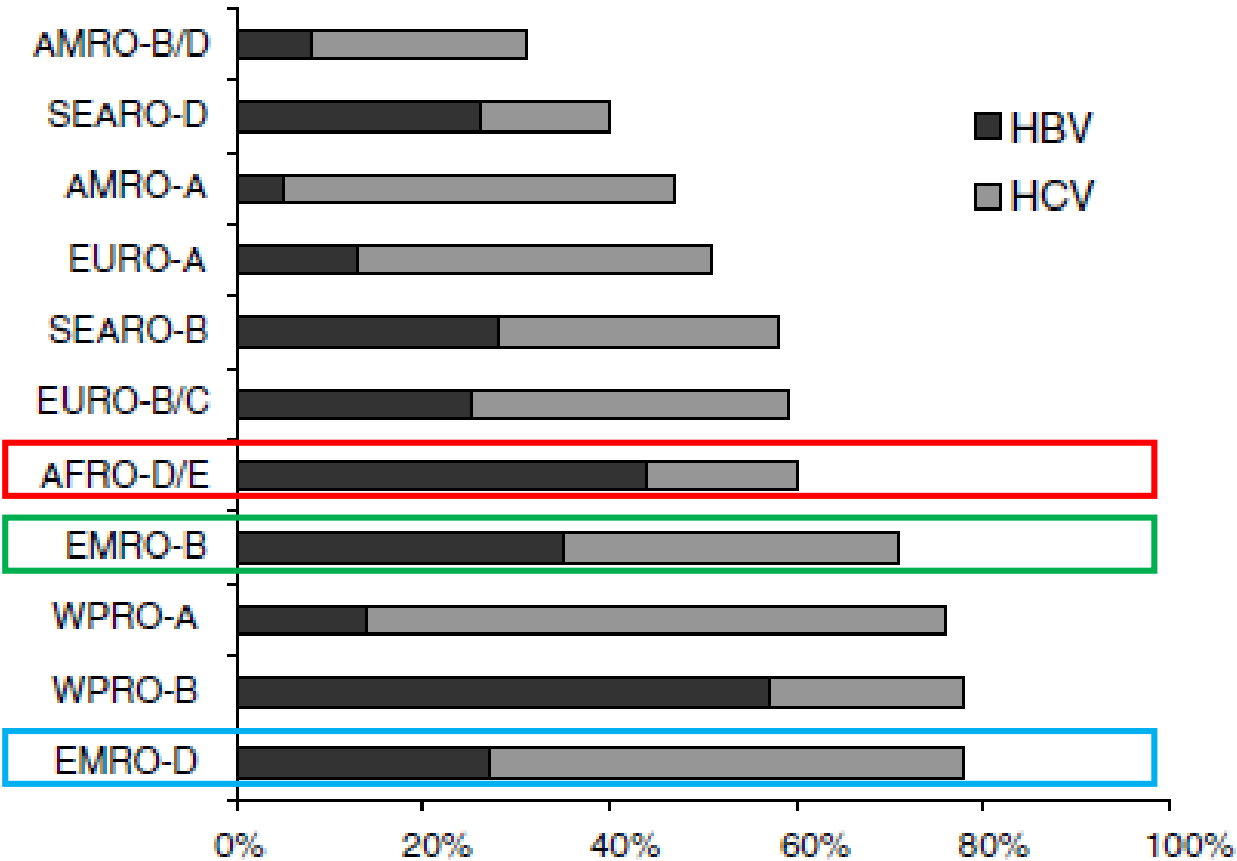
# Mortalité liée aux hépatites: cirrhose et hépatites!



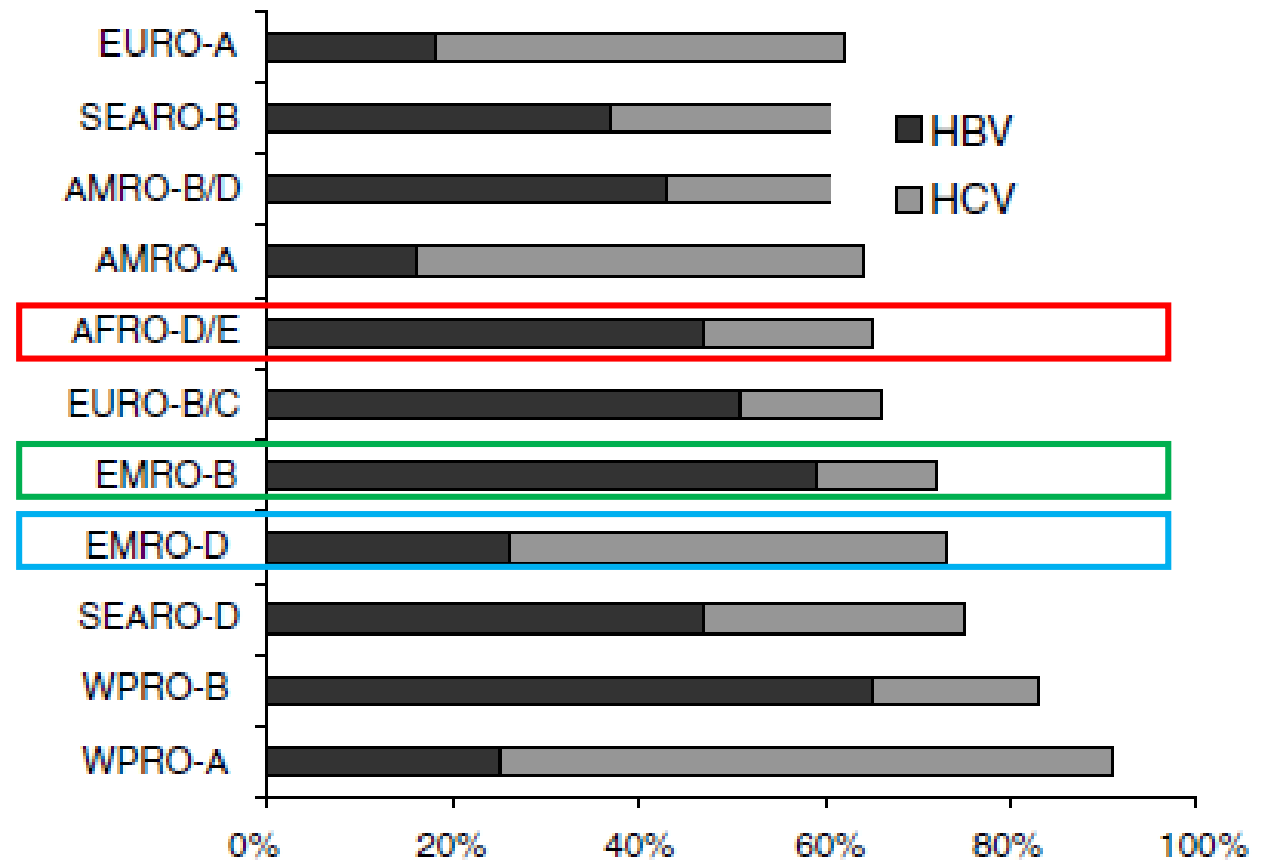


# Contribution VHB et VHC aux maladies hépatiques

a CIRRHOSIS

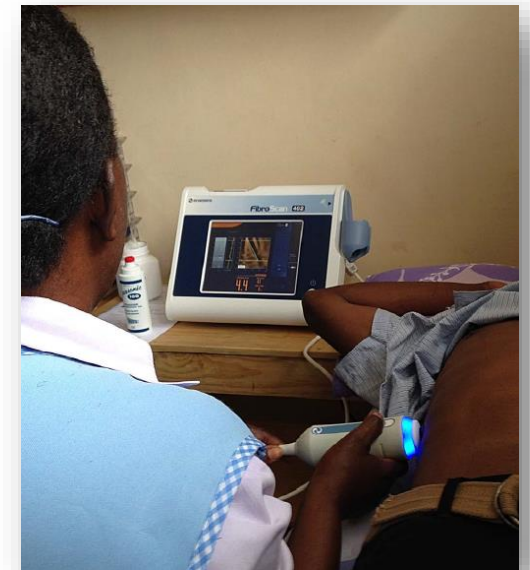


b HEPATOCELLULAR CARCINOMA



# Coinfection VIH/VHB et fibrose hépatique en Afrique sub-Saharienne

Study	Pays	N	Fibrose significative aOR (95% CI)	Cirrhose aOR (95% CI)
Vinikoor et al. 2016	Zambie	653	2.8 (1.5–5.5)	7.3 (2.1–24.6)
Hawkins et al. 2013	Nigeria	325	5.5 (2.5, 12.3)	NA
Stabinski et al. 2011	Uganda	500	2.0 (1.1–3.9)	NA
Jaquet et al. 2017	Senegal, Togo, Côte d'Ivoire	807	2.5 (1.1–6.1)	NA



# Proportion de VHB-monoinfectés avec fibrose/cirrhose en Afrique sub-Saharienne

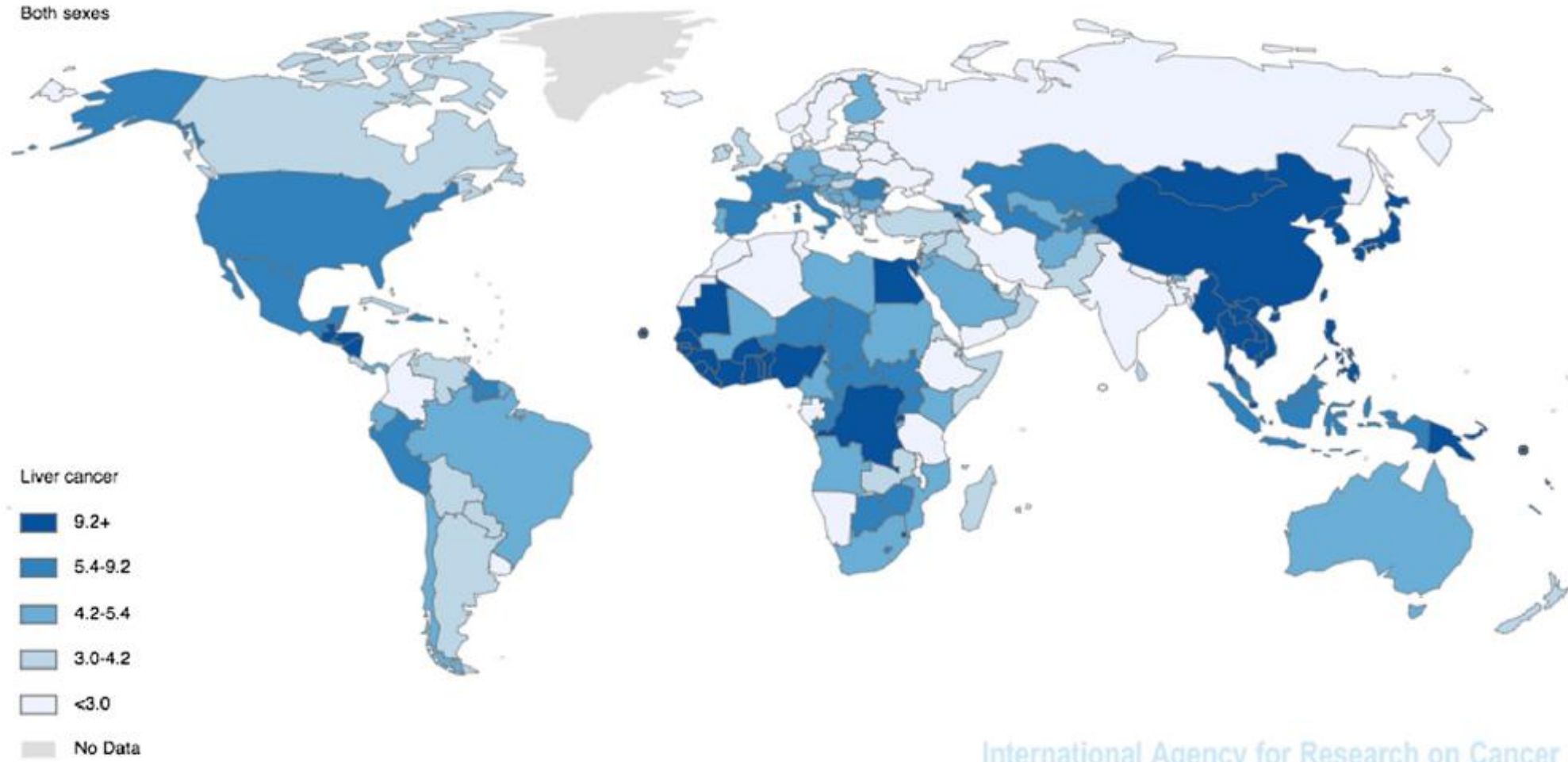
Study	Pays	N	Fibrose significative (%)	Cirrhose (%)
Shimakawa et al. 2016	The Gambia	269	15 (5.5)	1 (0.4)
Abreha et al. 2013	Ethiopia	268	79 (29.5)	50 (18.7)
Jaquet et al. 2017	Senegal, Togo, Côte d'Ivoire	110	11 (10.0)	3 (2.7)
Traoré et al. 2015	Mali	147	29 (19.7)	8 (5.4)
Vinikoor et al. (unpublished)	Zambia	68	19 (27.9)	14 (20.6)

RESEARCH ARTICLE

# “Waiting for DAAs”: A retrospective chart review of patients with untreated hepatitis C in Rwanda

Laboratory Studies	N	n (%)
Median HCV viral load [log <sub>10</sub> IU/ml] (IQR)	253	5.8 (5.4, 6.3)
HCV viral load > 800,000 copies (IU/ml)	253	112 (44.3)
HCV genotype	60	
1		0 (0)
2		1 (1.7)
3		1 (1.7)
4		58 (96.7)
Albumin < 3.5	166	19 (11.4)
Platelets < 90,000/mm <sup>3</sup>	187	9 (4.8)
FIB-4	173	
≤1.45		61 (35.3)
>1.45 to ≤3.25		75 (43.4)
>3.25		37 (21.4)

# Incidence du HCC élevée en Afrique et Asie

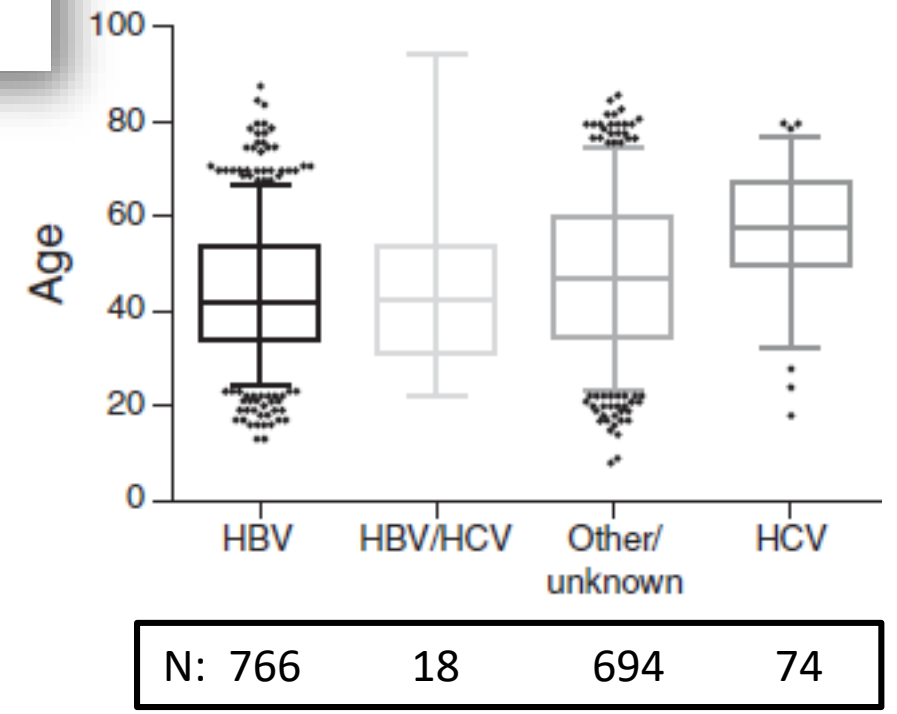
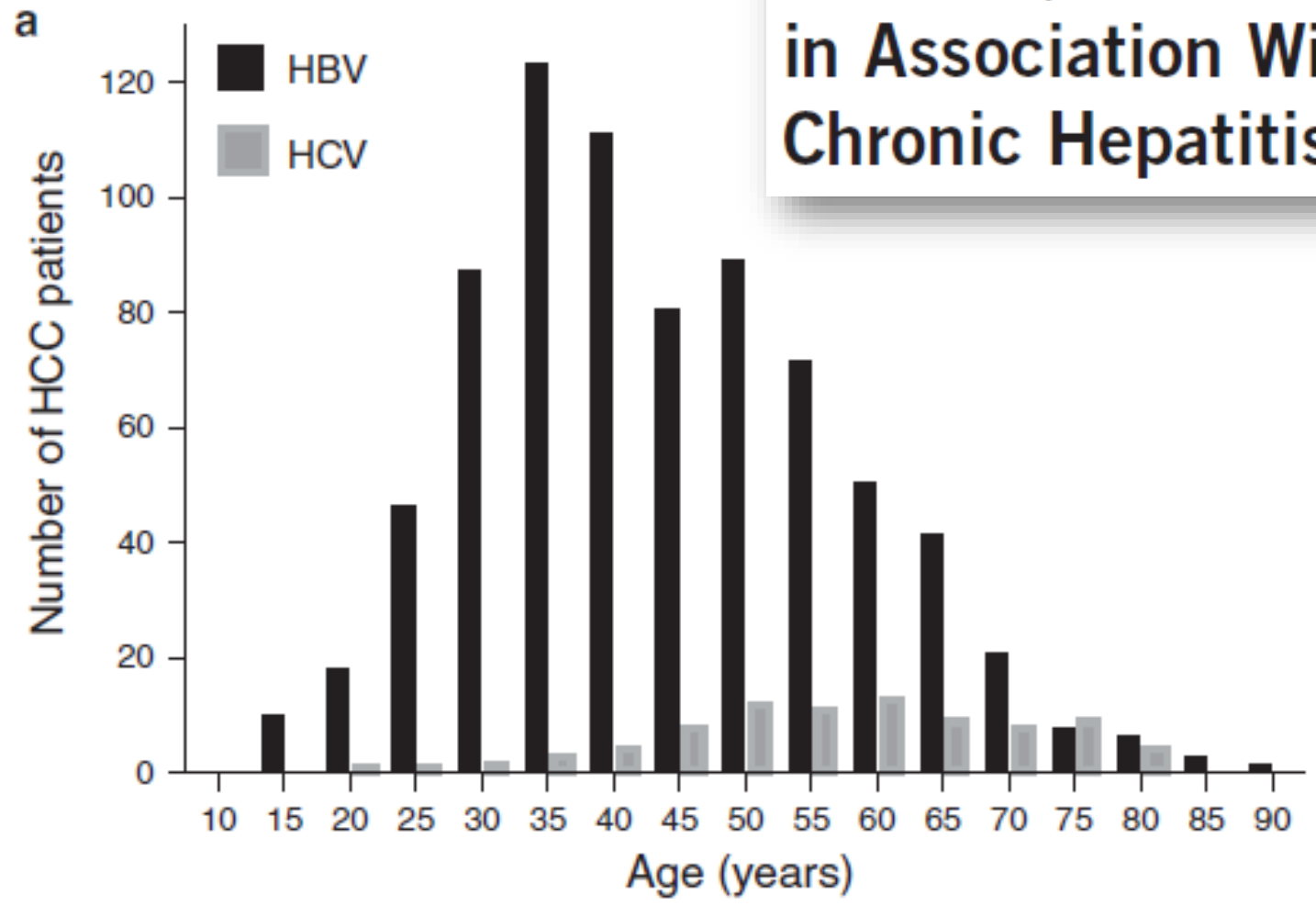


Source: GLOBOCAN 2012 (IARC)

International Agency for Research on Cancer



# Hepatocellular Carcinoma Occurs at an Earlier Age in Africans, Particularly in Association With Chronic Hepatitis B



# VHC est le facteur de risque le plus important en Tunisie, Algérie et au Maroc

## First multicenter study for risk factors for hepatocellular carcinoma development in North Africa

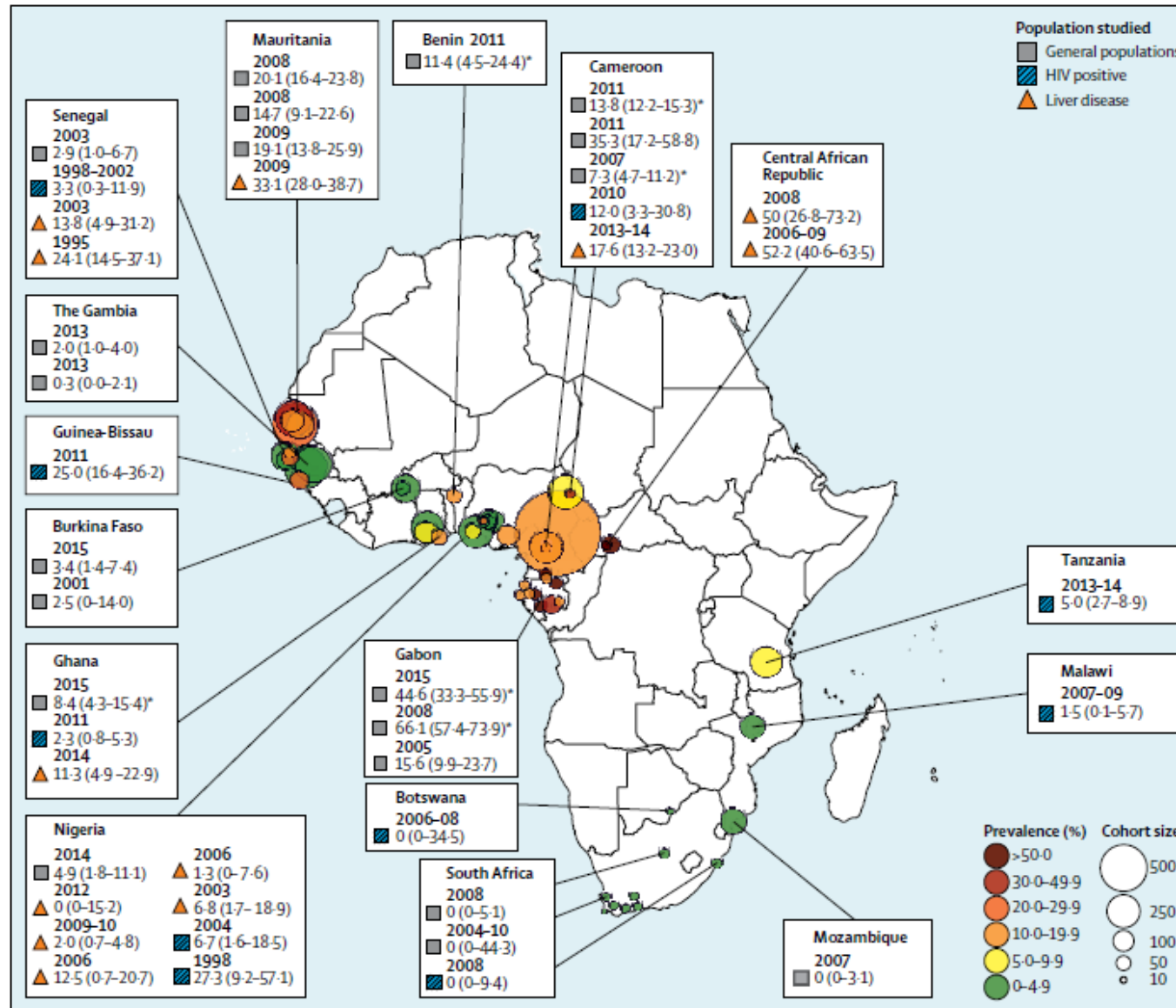
Table 1 Distribution of hepatocellular carcinoma cases and control according to studied risk factors

Risk factor	HCC cases (n = 164)	Controls (n = 250)	Odds ratio
NIDD	18.00% (n = 139)	2.70% (n = 225)	8.0 (3.1 - 20.0)
HBV status			
HBsAg +/-anti-HBc +	17.90%	4.00%	7.2 (3.2 - 16.1)
Anti-HBc + alone	15.40%	11.50%	2.1 (1.1 - 4.0)
Anti-HBc +/-anti-HBs +	23.50%	14.60%	2.5 (1.5 - 4.4)
Anti-HCV			
Anti-HCV +	60.00%	4.40%	32.0 (15.8 - 65.0)

Table 2 Risk of hepatocellular carcinoma related to hepatitis B virus and/or hepatitis C virus infections and non-insulin-dependent diabetes

Risk factor	Adjusted odds ratio	95% IC
NIDD	5.9	1.7 - 19.7
HBsAg +/-anti-HBc +	10.6	3.9 - 28.8
Anti-HCV +	33.3	14.1 - 78.8
B/C co-infection	84.7	4.3 - 366.9

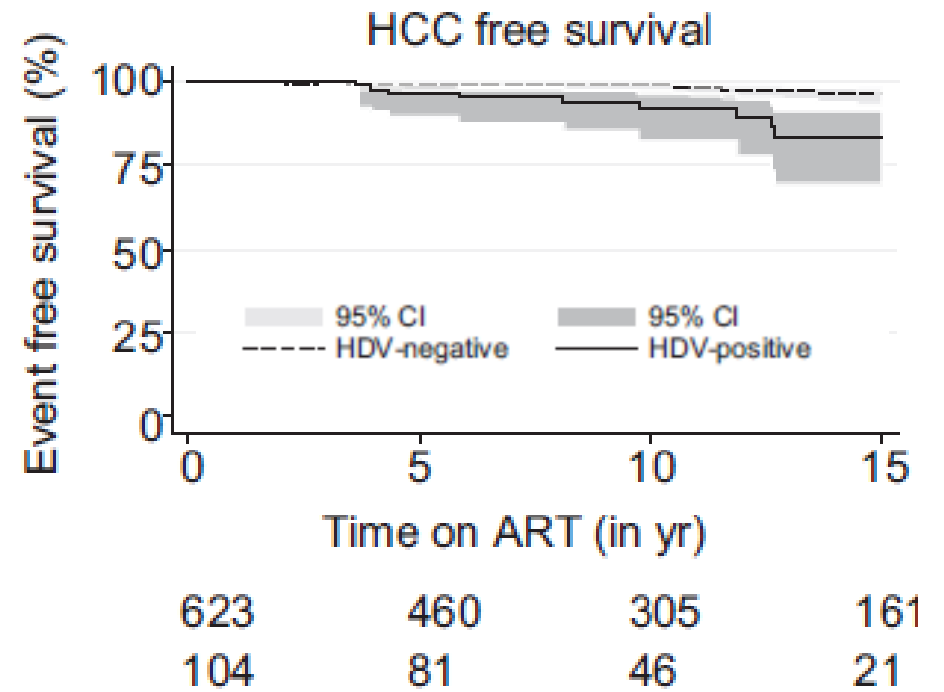
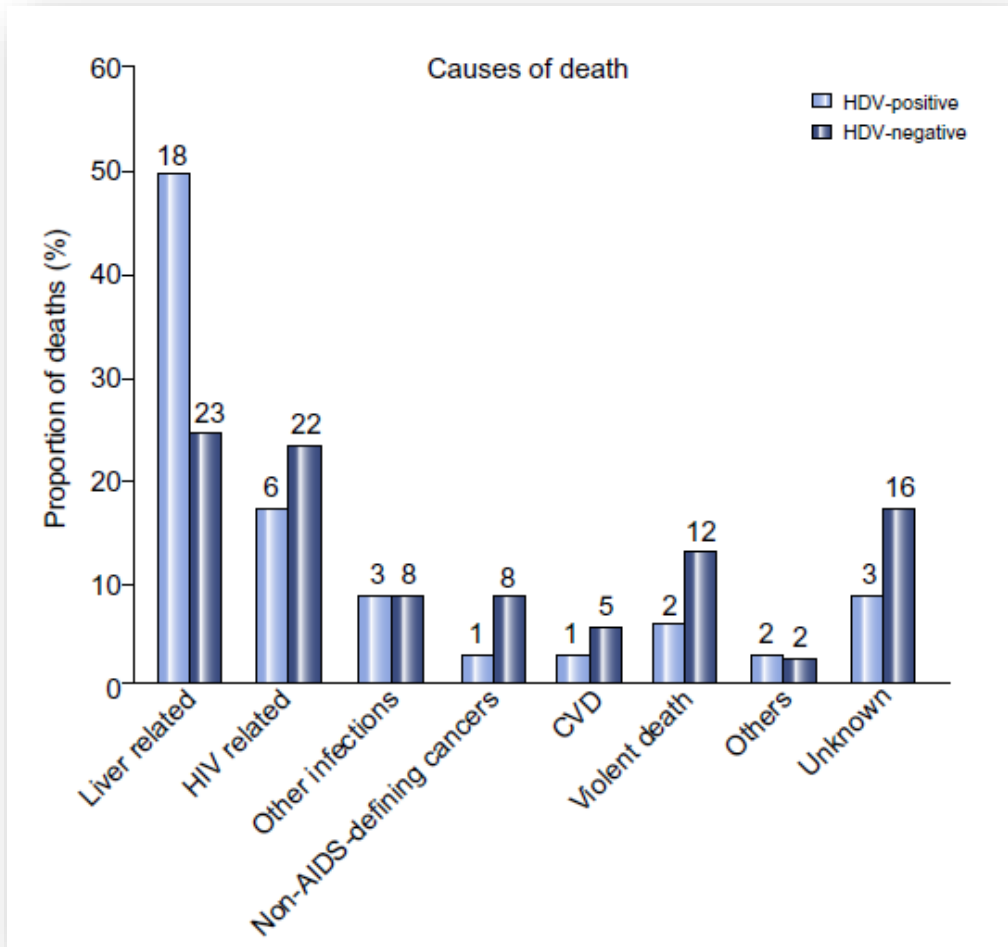
# Prévalence VHD variable: 30 études en Afrique





# Hepatitis delta is a major driver of liver-related outcomes

HDV prevalence in the SHCS: 119/771 (15.4%, 95% CI 12.9-18.0)



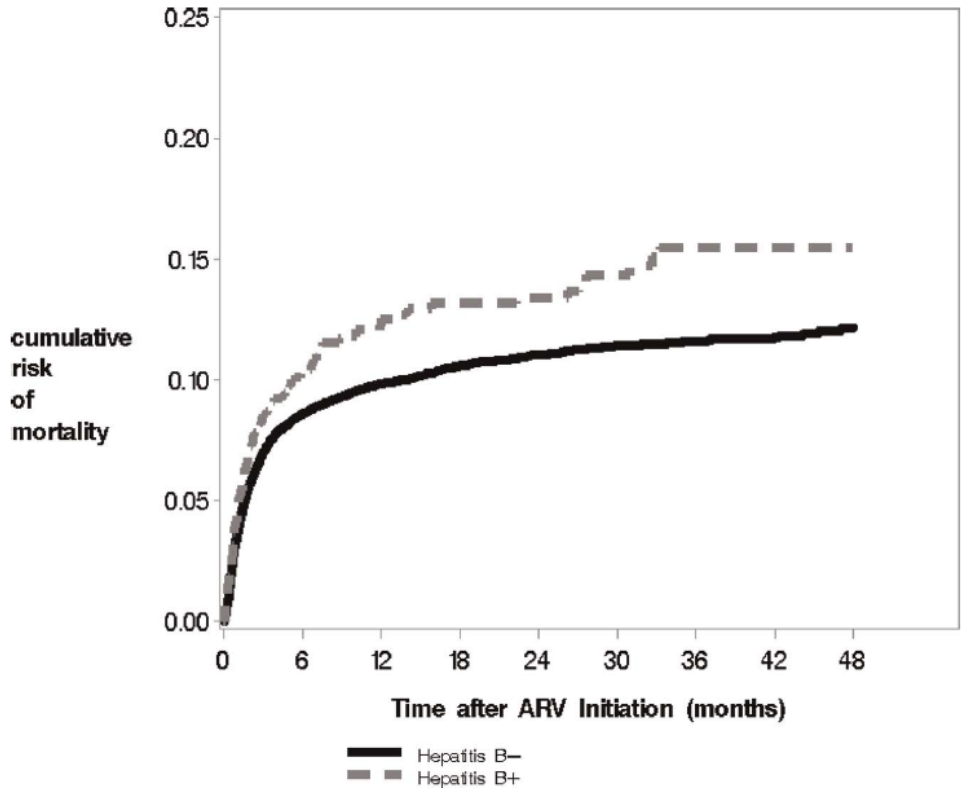
SWISS  
HIV  
COHORT  
STUDY

aHR 9.30, 95% CI 3.03-28.61

# Mortalité élevée au sein des populations VIH/VHB-coinfectés

**Overall mortality**  
Tanzania  
HBsAg+: 1,079/17,539

**Liver-related mortality**  
United States  
HBsAg+: 326/5,293



HIV-1	HBsAg	Person years	Deaths from liver disease (n)	Liver mortality per 1000 person years	p
-	-	31 366	0	0.0	Reference
-	+	1318	1	0.8	0.04
+	-	20 605	35	1.7	<0.0001
+	+	1834	26	14.2	<0.0001
Overall		55 123	62	1.1	..

Table 3: Comparison of liver-related mortality by HIV-1 and HBsAg status

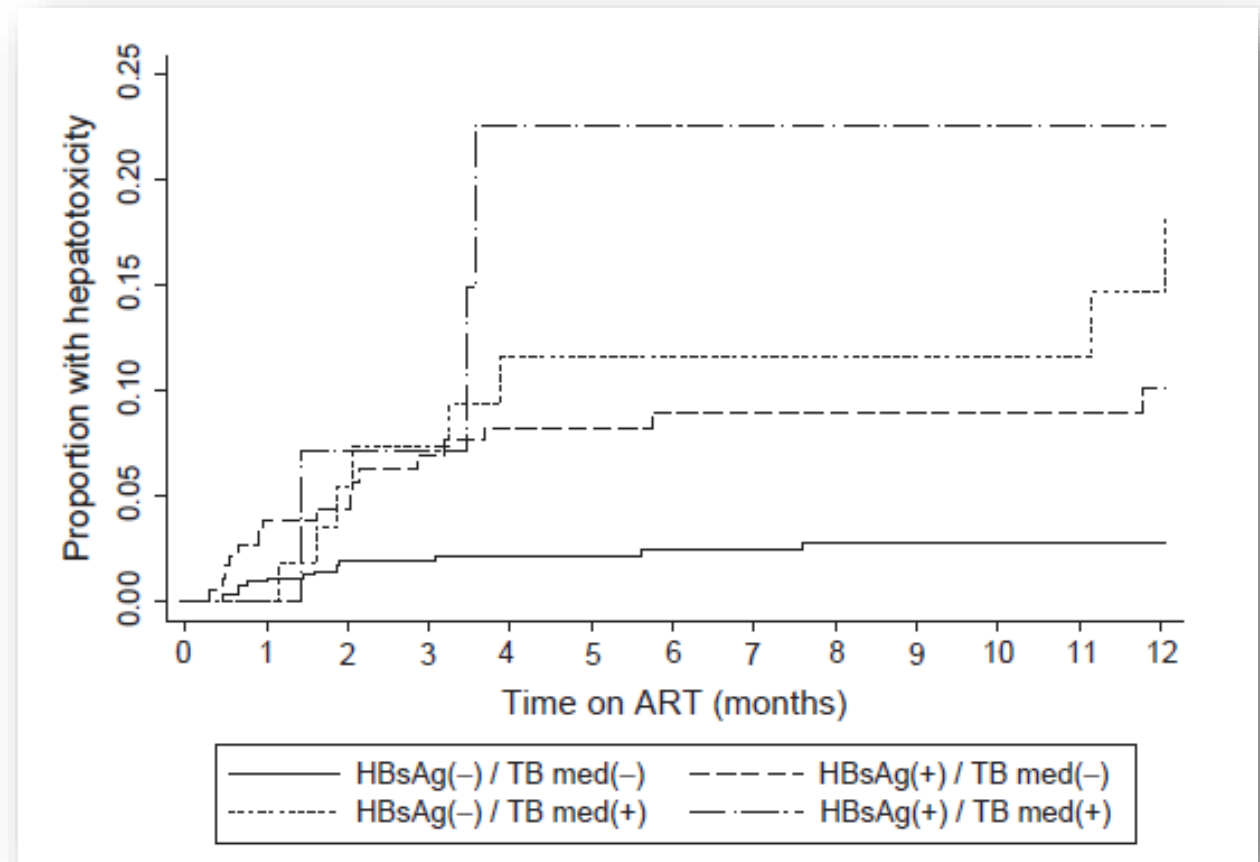
**Liver mortality 18x higher in HIV/HBV vs. HBV**

Hawkins et al. *AIDS* 2012

Thio et al. *Lancet* 2002

# Hepatotoxicity in an African antiretroviral therapy cohort: the effect of tuberculosis and hepatitis B

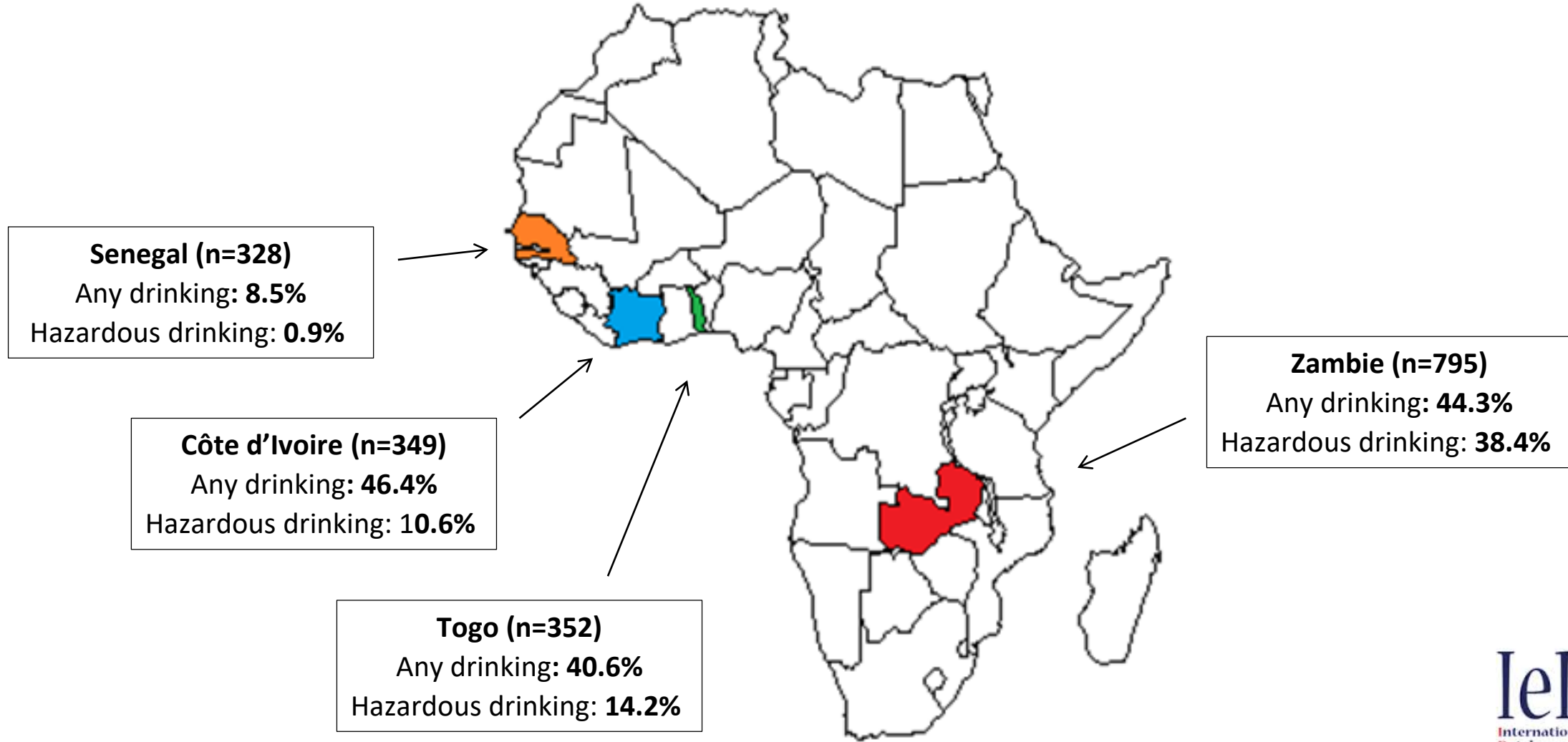
Variable	<i>n</i> (%) or IQR
Age (years) ( <i>n</i> = 868)	
< 35	143 (16%)
35–39	222 (26%)
40–44	232 (27%)
≥ 45	271 (31%)
Sex ( <i>n</i> = 868)	
Male	818 (94%)
Female	50 (6%)
History of TB before ART ( <i>n</i> = 867)	
Tuberculosis treatment overlapping start of ART	495 (57%)



# Synergistic interaction between aflatoxin B<sub>1</sub> and hepatitis B virus in hepatocarcinogenesis

	HBV alone RR (95% CL)*	AFB <sub>1</sub> alone RR (95% CL)	HBV and AFB <sub>1</sub> RR (95% CL)
Ross et al. (11)	4.8 (1.2, 19.7)	1.9 (0.5–7.5)	60.1 (6.4–561.8)
Qian et al. (10)	7.3 (2.2, 24.4)	3.4 (1.1–10.0)	59.4 (15.6–212)
Wang et al. (12)	17.4 (3.6, 143.4)	0.3 (0–3.6)	70.0 (11.5–425.4)
Lunn et al. (13)	17.0 (2.8, 103.9)	17.4 (3.4, 90.3)	67.6 (12.2, 373.2)

# La consommation d'alcool est très variable!





## Conclusions

- Cirrhose et HCC constituent les complications majeures des hépatites virales et sont des causes de mortalité importantes dans les pays du Sud
- L'étude des complications hépatiques des hépatites virales est complexe au vu des nombreux facteurs de risques
- Primordial de connaître l'épidémiologie locale et l'importance relative des comorbidités
- Mise en place de cohortes longitudinales pour l'évaluation des complications hépatiques en Afrique est urgente!

**Merci pour votre attention**

